

July 2024. Technological report.

# Exponential Leaders in Catalonia, 2024

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**ACCIÓ**  
Government of Catalonia



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**Carried out by**

Strategy and Competitive Intelligence Unit of ACCIÓ

Technological Transformation and Disruption Unit of ACCIÓ

Barcelona, July 2024

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Exponential Leaders in Catalonia, 2024

# Prologue

In today's business world, innovation and disruption are essential drivers of growth and the transformation of markets and ecosystems. In this year's edition of the Catalonia Exponential Leaders we find both start-ups and established companies that have managed to reinvent themselves and stay ahead of the curve.

Disruptive companies are those that challenge established norms and reconfigure themselves through innovation. These companies, whether startups or established companies, have in common their ability to identify opportunities, challenge the status quo and offer transformative solutions.

Startups exemplify agility and creativity. Often with limited resources, these new companies come to market with unique propositions, often relying on emerging technologies.

Established companies, on the other hand, face the challenge of sustaining themselves in an increasingly competitive and changing environment. Many of these organizations have managed not only to survive, but to stand out by adopting a disruptive way of doing things in order to maintain their leadership.

The business framework is constantly evolving and disruptive companies are the catalyst for this change. Whether it is the creativity of a startup or the reinventiveness of an established company, disruption is a force that drives progress and creates new opportunities. This year's Catalonia Exponential Leaders are not only an example of success, they also offer an inspiring vision for the future in an increasingly changing and technological world.

**ALBERT CASTELLANOS MADUELL**

SECRETARY FOR ENTERPRISE AND COMPETITIVENESS OF THE MINISTRY OF  
BUSINESS AND LABOUR OF THE GOVERNMENT OF CATALONIA.

## Motivation behind the Exponential Leaders 2024 initiatives

This year, 30 disruptive initiatives driven by well-established companies, spin-offs and startups have adopted exponential technologies with an AI component in order to accelerate their business model or open up a new space to generate and capture value. This adoption of technology responds to impulses and ambitions that benefit or restrict the disruptive potential of the initiatives. As a result of the work carried out within the framework of the Catalonia Exponential Leaders Programme, we have identified four main motivations for companies when it comes to promoting these initiatives:

**Anticipating changes in the industry:** being the “provider of the future”. Defensive adoption by companies in mature markets so as to maintain their position as “providers of the future”. The innovation is closely linked to the current business and it’s difficult to explore new models.

**Anticipating legislative changes:** being “compliant with the future”. Companies are being forced to adopt new technologies to meet new legal requirements. Startups are exploring these needs that are generated and building business models to address them.

**Anticipating a new standard:** being “compatible with the future”. Defensive ambition involves being attentive to the generation of a new standard in the industry and guaranteeing compatibility. Disruptive ambition leads to active participation and experimentation for the formulation of the standard, anticipating new areas of value and generating a support community.

**Anticipating a new system:** being the “agent of the future”. The emergence of new competitors is obliging companies to speed up their experimentation. At the same time, disruptive ambition is attacking certain functions or segments critical to the incumbents with a new value proposition.

In conclusion, anticipation is a constant in each and every one of this year's Exponential Leader candidate projects.

**JAVI CREUS**

FOUNDER OF IDEAS FOR CHANGE.

CONTRIBUTOR TO THE CATALONIA EXPONENTIAL LEADERS PROGRAM.

## Foreword: collaborating entities



The path towards the consolidation of the Catalan technological ecosystem requires support for entrepreneurs seeking to provide disruptive and feasible solutions to the current challenges facing society.

With the Catalonia Exponential Leaders program we're building what's set to be one of the most important economic, technological and social pillars in Catalonia by 2030.

**MIQUEL MARTÍ**  
CEO



Our aim at the Mobile World Capital Barcelona Foundation is to contribute to the positioning of our ecosystem as a global benchmark for digitization and innovation. As this year's Catalonia Exponential Leaders demonstrates, disruptive innovation is part of the DNA of startups and spin-offs, but also of corporations from traditional sectors, a trend that encourages us to be optimistic about the future of our business fabric.

It's been a wonderful experience to contribute to the recognition of the leading projects in Catalonia.

**JORDI ARRUFÍ**  
CHIEF CORPORATE DEVELOPMENT OFFICER



Catalonia is a highly innovative region, as demonstrated by the European Union's Regional Innovation Scoreboard.

Offering visibility to the most disruptive companies and projects should serve as an inspirational element and help to further improve this high value-added part of the economy.

Cooperation between institutions is undoubtedly necessary if this is to be done with certain guarantees.

**VICENTE ATIENZA**  
HEAD OF THE INNOVATION,  
ENTREPRENEURSHIP AND SUSTAINABILITY SERVICE

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# 1. Definition disruptive innovation



Disruption [dɪsˈrʌp.ʃən]



*disruption* (break, fracture)

## Disruptive innovation

Disruptive innovation is a kind of innovation based on the creation of new products, services and business models that render what's been done until now obsolete and achieve a change in consumer habits.

- Disruptive innovation focuses on improving the customer experience and generating new value. It tends to destabilize markets.
- It goes far beyond sustainable innovation and is capable of revolutionizing an industry in such a way that it changes completely, to the extent that products and services that have formed part of the market before its irruption disappear.

Mentality  
and change  
of  
perspective

Technology  
as a  
facilitator of  
the solution

Generating  
new markets

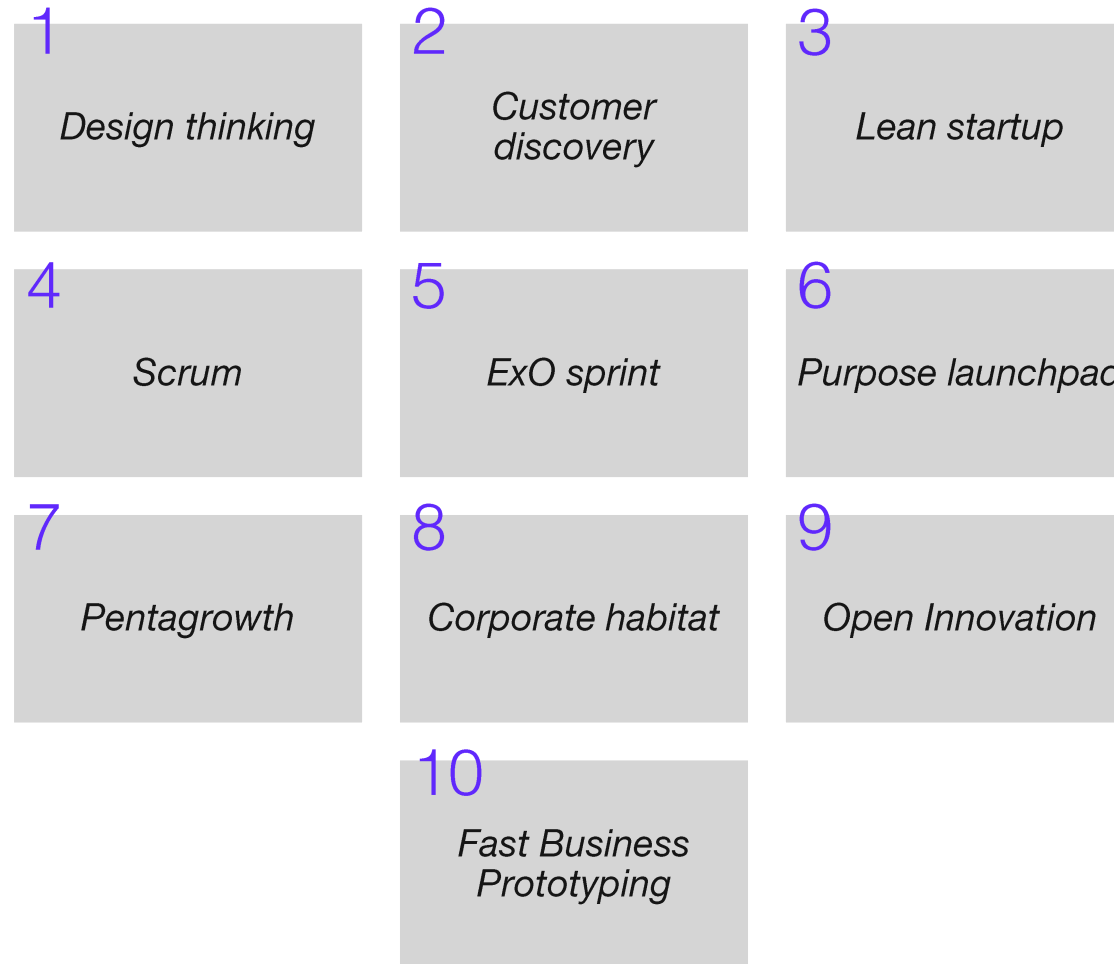
Scalable  
solutions

New  
business  
models



## Methodologies and frameworks of work

Disruptive innovation can be accelerated by using different frameworks, tools and methodologies for innovation so as to generate new initiatives and make it easier for them to reach the market.



In this methodology the users are placed center stage and innovative solutions are generated to meet their needs.

It's divided into the following series of **stages**, which can be iteratively returned to:



**Empathize:** Identify the wishes and needs relevant to the user.



**Define:** Organize all the information that's collected to identify all the areas of opportunity that can offer relevant solutions to the user.



**Devise:** Provide as many ideas as possible that address the challenge that's posed.



**Prototype:** Give shape to the ideas in order to show them to users, who can provide their own feedback and say how well the solution suits their needs.



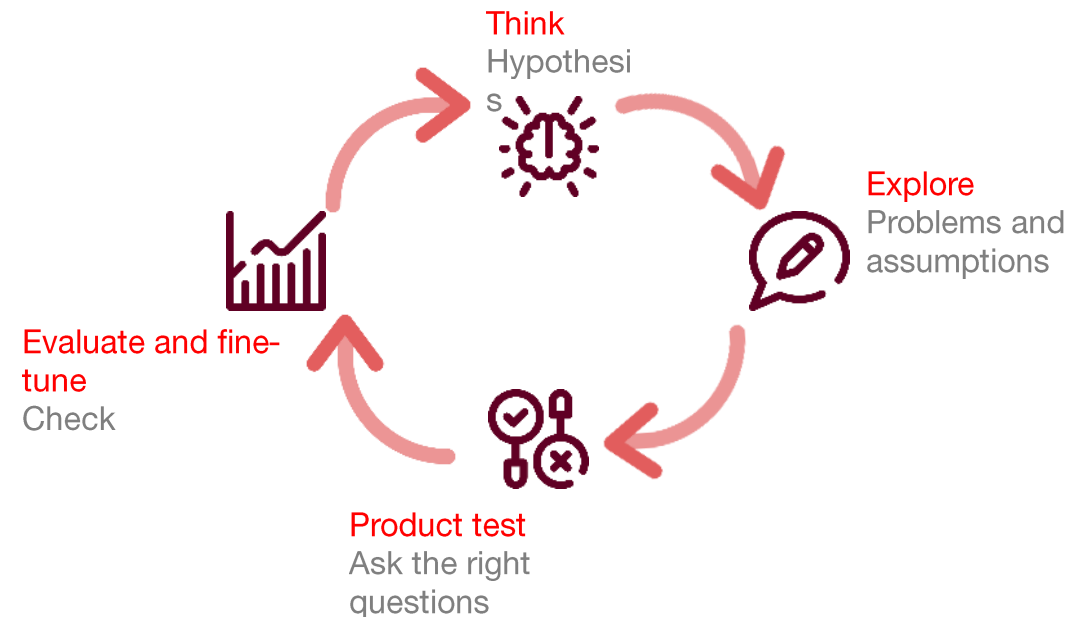
**Validate or test:** Show the solution to users with the aim of finding out whether it answers their problems and whether it addresses their needs.

Customer discovery is the initial iterative process to understand the customers' situations, needs and critical points.

Customer discovery involves defining and prioritizing people, and is applicable to both startups and large companies as they develop new products, target new people and seek to enter new markets. The process encompasses the customer's entire journey.

It's based on **four stages**:

- 1. Defining the hypothesis.** The first step is to form a hypothesis that defines both the problem and the proposed solution.
- 2. Checking the problems and assumptions of the hypothesis.** A good way to set out these assumptions is to create a hypothetical person to represent a customer. He/she must be specific; give this person a name, an age, a career, hobbies, interests and prospects.
- 3. Asking the right questions.** In this phase it's a matter of checking with the customers whether the devised service or product serves to solve their problem and whether it has a real market.
- 4. Evaluating and fine-tuning.** This phase can reaffirm concepts and reveal new aspects that haven't been taken into account in the hypothesis, ones that can be incorporated to reformulate it and thus improve the product or service.



Source: Steve Blank

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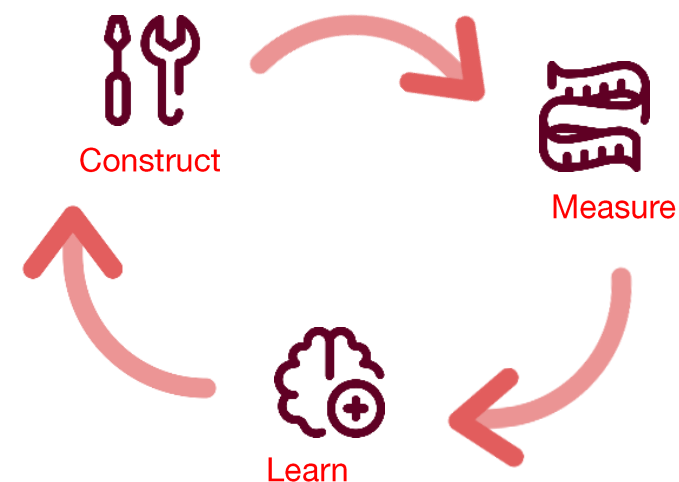
Lean Startup focuses on the customers' needs, and relies on their feedback to modify the product until the final version is developed.

The lean startup methodology can check the validity of the product throughout the creation process. The customers' needs are identified upon the basis of a prototype and, as it isn't a finished product, the investment can be lower.

The main **goal** of this methodology is to create a scalable business model through an iterative process based on which the functional, social and emotional needs required to reach the target audience are gradually revealed.

The lean startup method is applied in three steps: **construct, measure and learn**. These steps allow constant motion, as the product that's created is tested with the customers and, once the results are analyzed, it can be constructed again.

- **Construct:** In this initial phase it's essential to transfer the idea to a material product. The result obtained is a minimum viable product (MVP).
- **Measure:** Information on the product and consumer reactions are requested.
- **Learn:** In the last step the company learns from the results collected throughout the process. The cycle then starts to produce the final product again.



Source: The Lean Startup, Eric Ries

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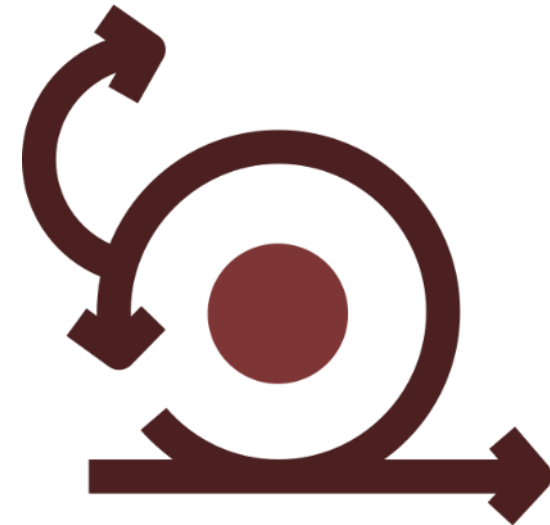
This tool provides a collaborative work framework across teams to find adaptive solutions for complex problems.

Scrum is based on **empirical evidence** and **lean thinking**. It uses an iterative and incremental approach to optimize predictability and control risk.

It involves groups of people who collectively have all of the skills and knowledge to do the work and share it.

Scrum enables partial and regular deliveries of the final product to be made, prioritized in accordance with the benefit they bring to the recipient of the project. Scrum is therefore particularly suitable for projects in complex environments in which results are needed quickly, the requirements change or are poorly defined and innovation, competitiveness, flexibility and productivity are essential.

Scrum is also used to resolve situations in which customers don't get what they need: when deliveries take too long, costs skyrocket or the quality is not acceptable, and also when responsiveness to competition is required, when team morale is low and turnover high, when inefficiencies need to be systematically identified and resolved or when it is desirable to work using a specialized process in the product development.



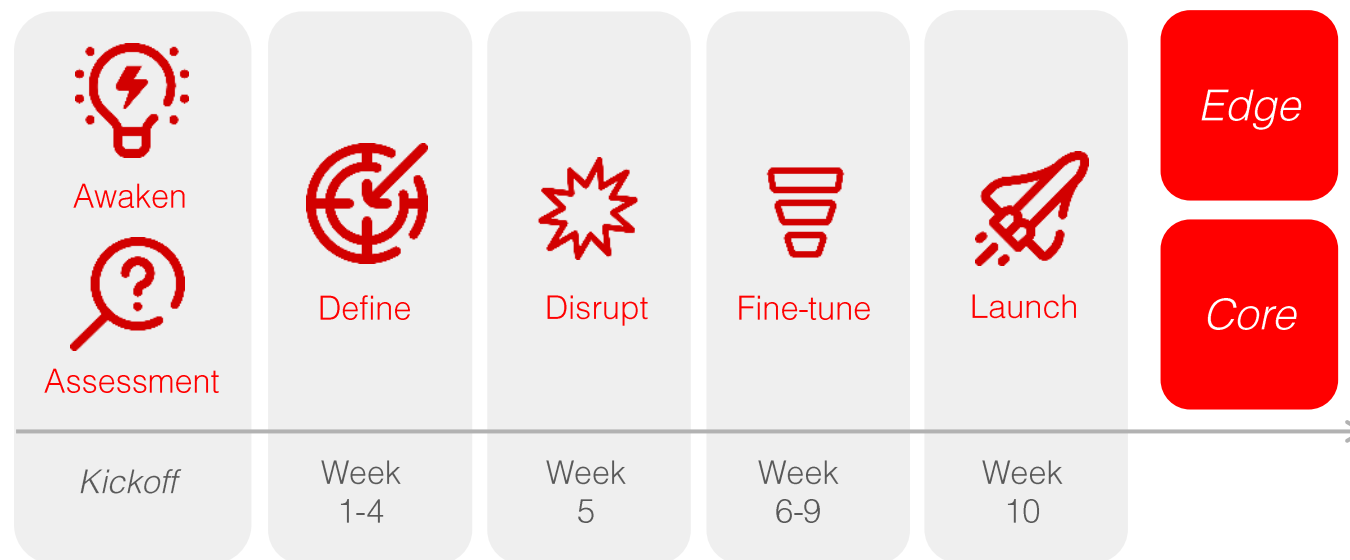
Source: Scrum

The ExO sprint process includes various techniques and methodologies that help an organization faced with disruptive changes in the environment transform its current business and generate new initiatives.

In the ExO sprint process, organizations prepare to combat the corporate immune system that prevents innovation and change. They also learn to use a practical and continuous learning approach that allows them to develop their internal capabilities.

The process of executing an ExO sprint, which lasts ten weeks, can generate **two groups**:

- **Core**, which will generate initiatives focused on innovation without seeking to change the business model to deal with external disruptions.
- **Edge**, which will generate initiatives that are different from the company's current business model.



Source: *ExO Sprint*, Francisco Palao

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# The 10 attributes of an exponential organization


ExO organizations are characterized by expressing a massive transformative purpose (**MTP**) and 10 attributes allowing them to connect and manage the abundance.

**MTP:** The massive transformative purpose is the reflection of the organization's aspiration and describes the change it wants to bring to the world. It goes beyond the company's mission and vision.

**SCALE.** These are the attributes that enable the organization to connect with leverage assets so as to grow exponentially within a framework with a high degree of uncertainty

-  Staff on demand: a group of skilled workers hired as required in order to carry out the operational elements of the core business.
-  Community: a group of people passionate about the MTP.
-  Algorithms: a set of step-by-step instructions to automate a task.
-  Leverage assets: assets that are used on demand to offer the value proposition.
-  Engagement: the use of techniques such as reputation systems, gamification, loyalty programs, prizes and incentives to keep the community active.
- 

**IDEAS.** These are the attributes that enable the organization to manage the exponential growth

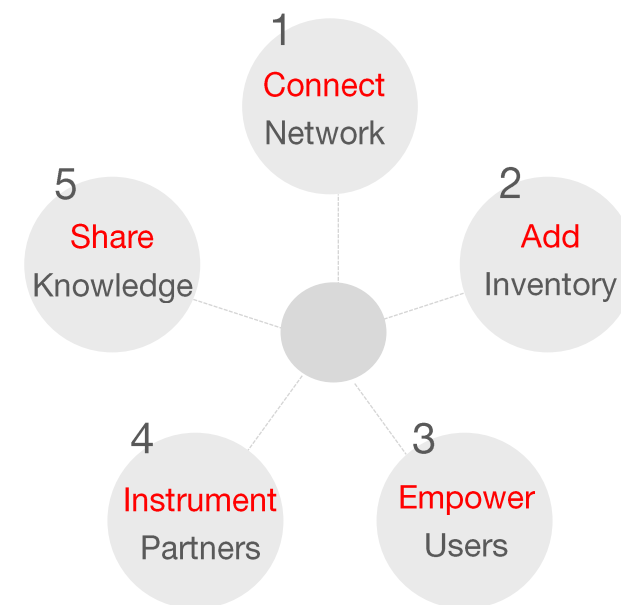
-  Interface: the users' digital experience with the products and services and interaction with other systems.
-  Dashboards: they provide real-time information in order to carry out the business.
-  Experimentation: techniques to evaluate new ideas and hypotheses in a streamlined manner.
-  Autonomy: self-organizing units that operate with decentralized authority. It can be applied internally and externally.
-  Social technologies: the use of technologies to speed up and facilitate the communication between the team and the community.

The pentagrowth methodology helps organizations visualize and create accelerated growth strategies generated from the recombination of their internal assets and other elements available in the ecosystem.

It's based on **five levers**:

- 1 Connect - network:** The number of nodes to which a company or organization is connected is directly proportional to its capacity for growth.
- 2 Add - inventory:** The less internal effort an organization makes to expand its available supply, the greater its potential for growth.
- 3 Empower - users:** The more user capabilities the organization leverages, the greater its potential for growth will be.
- 4 Instrumentalize - partners:** The more an organization makes it easier for third parties to develop their own business proposals for their business, the greater the potential for growth will be.
- 5 Share - knowledge:** The larger the community that regards the shared resources as its own, if the organization makes it easier for third parties to develop their own commercial proposals for their business, the greater the potential for growth will be.

The methodology consists of combining the elements available in each lever until a structure that can grow and generate value is found.



Source: *Pentagrowth*

## Purpose launchpad

This methodology helps entrepreneurs and organizations develop an idea from the initial stage so as to have a massive impact on a purpose-driven organization.

The methodology is based on **three phases** (exploration, validation and growth) and **eight axes**:

**Purpose:** This is the reason why the initiative exists.

**People:** This includes the external communities related to the purpose and the people who make up the internal work team.

**Customer:** These are the people or organizations that use or pay for the solutions. It's necessary to understand their problems, which will be the challenges related to the purpose, and also how they behave and relate to the initiative throughout the different stages of the market.

**Abundance:** This is the appropriate identification of the sources of abundance and exponentiality that should allow the organization to adopt faster growth.

**Sustainability:** This axis entails three-fold sustainability: planet, people and profit.

**Processes:** This is the way the initiative is organized to explore possibilities, build the right solution, and run daily operations efficiently.

**Products:** This is the process of defining and building the right solution for the different customer segments. It envisions different approaches for each of the phases: low-fidelity prototypes for the exploration phase, a minimum viable product for the evaluation phase, and optimized products for the impact phase.

**Metrics:** These are the indicators that should show how the business is evolving.



Source: *Purpose Launchpad* guide, Francisco Palao

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The environment and external elements that an innovative initiative needs to develop properly within a corporate context.

- Converting innovation-related endeavor into a real impact
- The habitat must be created by leaders with the ability to generate the right environment
- Combining exploration with execution
- Managing and developing the habitat synchronously with the initiative

## Axes

- Purpose
- People
- Client
- Abundance
- Sustainability
- Processes
- Products
- Metrics

## Tools

### Development Radar™

Evaluation to measure the state of maturity of the initiatives and develop them throughout their phases in order to achieve a real impact.



### Initiative Habitat Status™

Evaluation to measure and improve the corporate habitat required by the transformative initiatives.



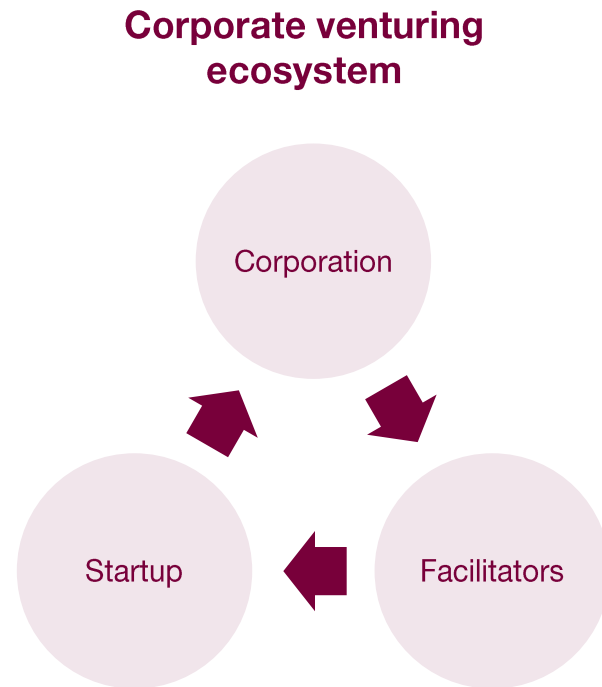
### Organization Habitat Map™

Evaluation focused on the corporate habitat. This can measure and create the corporate habitat required by the organization for its transformation during the exploration, evolution and impact phases.

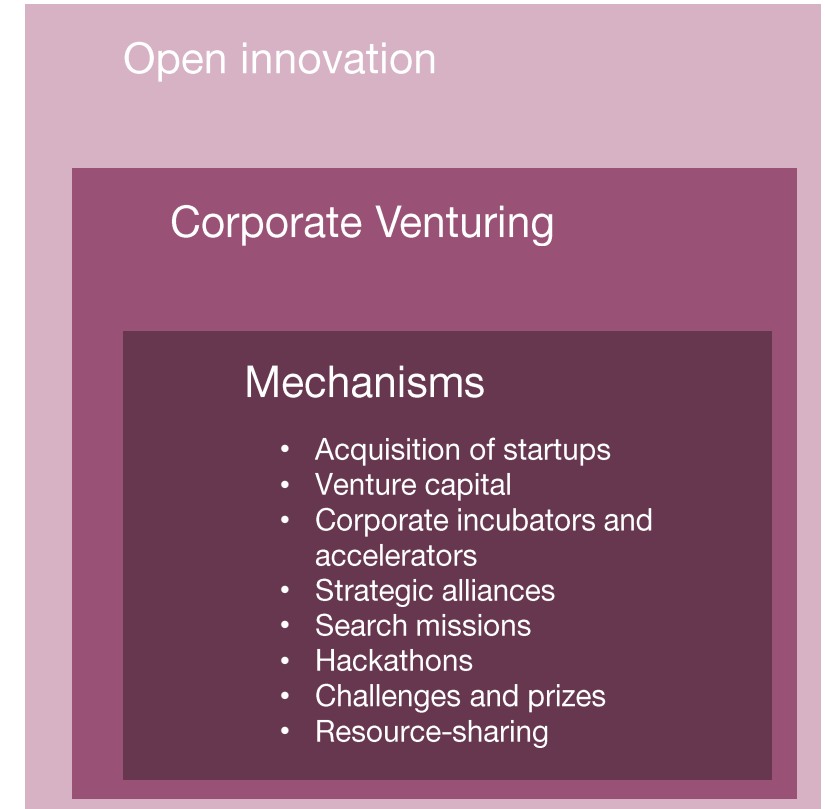


Source: <https://purposealliance.org/es/>

Corporate venturing is a tool for attracting and adopting innovations beneath the paradigm of open innovation, which assumes that companies can and should use external ideas to further their technology.



- Corporate venturing is the means through which corporations take part in the success of external innovation to help them obtain information on markets and access to capacity, providing a collaborative framework that serves as a bridge between innovative startups and well-established corporations.
- It includes mechanisms such as challenges with prizes, hackathons, search missions, resource-sharing, strategic partnerships, corporate incubators and accelerators, corporate venture capital and the acquisition of startups.
- To create the ecosystem it's also necessary to have a facilitator, which may be a company, the public administration, a university, a research center, etc.



Source: Open Innovation. IESE

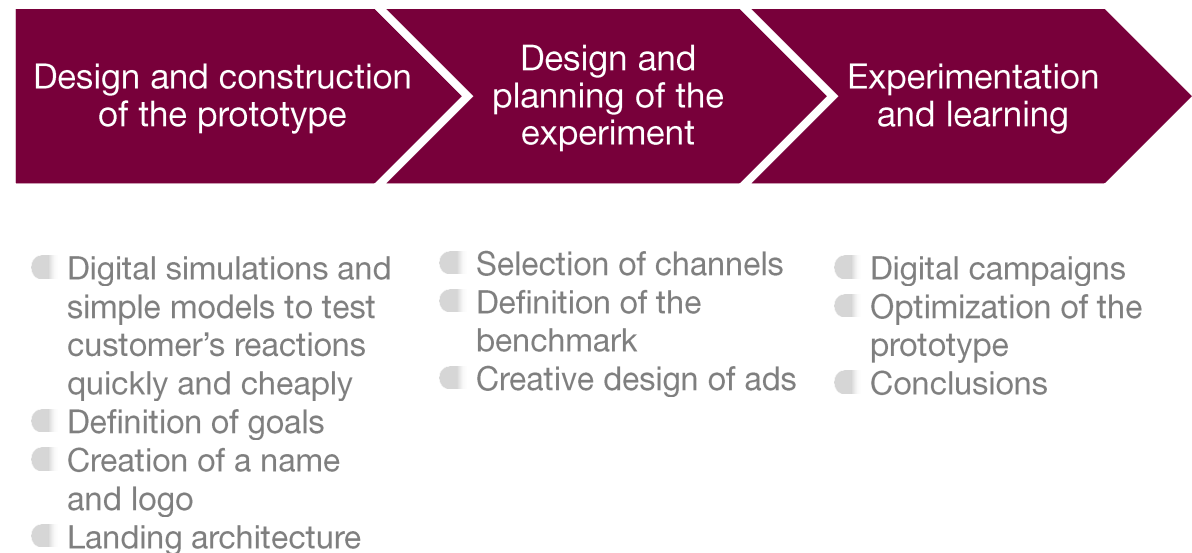
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## Fast Business Prototyping

This methodology involves designing and building a prototype to validate business and market hypotheses before actually launching the product or service.

- It's a process that allows new business ideas to be rapidly tested and iterated before too much time and money is invested.
- A prototype is created to assess the viability of the business model, the existence of a market and the main hypotheses and make the necessary adjustments before launching the product or service.
- Fast business prototyping helps identify potential flaws or weaknesses in the business model from the outset and allows changes to be made so as to gear the strategy before investing a great deal of time and money into a product that may not be successful.
- It can also obtain feedback from potential customers early on in the process so as to help fine-tune the product or service.
- The methodology enables companies to validate their ideas within a few weeks.

### Fast Business Prototyping phases



Exponential Leaders in Catalonia, 2024

## 2. Catalonia Exponential Leaders 2024 Program



The **Catalonia Exponential Leaders** are the most disruptive Catalan companies, chosen from those that have submitted applications for the program's selection process.

With the Catalonia Exponential Leaders we wish to demonstrate that here in Catalonia there are also companies that are examples of transformation and adaptation to new disruptive opportunities, ones that can provide a source of inspiration for the entire Catalan business fabric.

[www.accio.gencat.cat/ca/serveis/innovacio/catalonia-exponential/catalonia-exponential-leaders](http://www.accio.gencat.cat/ca/serveis/innovacio/catalonia-exponential/catalonia-exponential-leaders)



## Catalonia Exponential Program - Disruptive innovation

ACCIÓ, the Agency for Business Competitiveness of the Government of Catalonia, believes in the imperative need to convey the message that the business transformation to address disruption must be a much more common practice within the Catalan business fabric.

With this aim in mind, the **Catalonia Exponential** initiative was launched in January 2019, seeking to introduce new user trends, exponential technologies and transformational methodologies to Catalan companies to enable them to address disruptive changes through the adaptation of their own business model and the generation of new business models to make them more competitive.

It gives a voice to major international leaders of the transformational innovation (through ACCIÓ's offices abroad) and identifies Catalan cases involving the transformation of more traditional sectors and fields that are regarded as paradigmatic. This is achieved by:



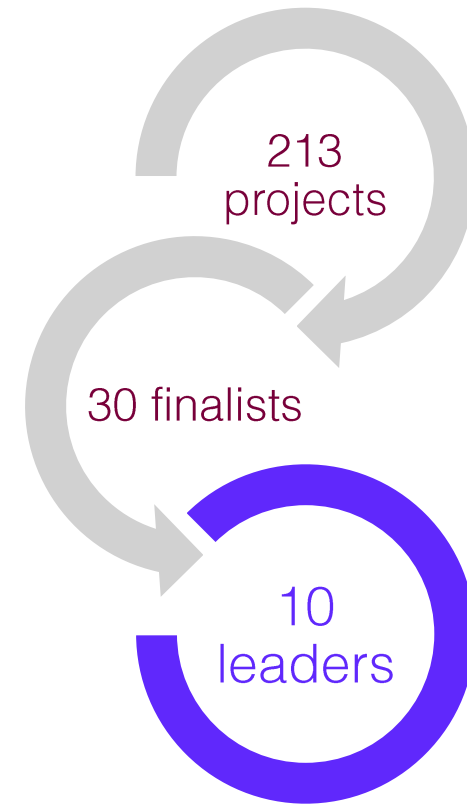
1. Carrying out **sensitization** activities and **placing emphasis on the business culture** required to address current challenges.
2. Providing **new business transformation methodologies** to achieve the above.
3. Connecting with **trends** through our offices.
4. Offering **support** to singular **initiatives** within the ecosystem.
5. Providing **support** for **companies** thanks to **the grants** for disruption, **collaboration** between startups and well-established companies and **open innovation challenges**.

# Catalonia Exponential Leaders 2024

The **Catalonia Exponential Leaders** program seeks to recognize Catalan companies that develop global disruptive solutions through transformative projects allowing them to generate new markets and have a positive impact on society.

This, the fourth program, has set up two categories of companies: **well-established ones** and **startups**. All Catalan companies that sought the recognition were able to submit their candidatures. A total of 213 applications were received (74% from startups and 26% from well-established companies).

The **thirty most disruptive companies in Catalonia** were selected and this report is based on them. Finally, the **ten companies regarded as the most disruptive and representative in various fields** were selected.



The Catalonia Exponential Leaders are inspiring **examples** for differential, daring and motivating projects with high growth potential **that are currently being undertaken in Catalonia.**



1. Having a **purpose** and imagining futures with a **positive impact**.
2. Daring to **generate new markets** based on disruptive ideas.
3. Incorporating **exponential technologies** into their projects.
4. Having a **scalable business model** that can impact numerous users.
5. Inspiring, **generating communities** and **building ecosystems** around them.
6. Using **external assets** to allow them to grow exponentially.
7. Making use of **collaborative tools** and encouraging **autonomy** and **gamification**.
8. Applying **experimentation** with a customer-centric approach.
9. Giving way to a **new company culture**.

 [www.accio.gencat.cat/ca/serveis/innovacio/catalonia-exponential/catalonia-exponential-leaders](http://www.accio.gencat.cat/ca/serveis/innovacio/catalonia-exponential/catalonia-exponential-leaders)

Exponential Leaders in Catalonia, 2024

## 3. The 30 finalists of Catalonia Exponential Leaders 2024

# The 30 finalists of Catalonia Exponential Leaders 2024

 **Agrobit**

 **BRICKKEN**

 **Druids**

 **NANOBOTS THERAPEUTICS**

 **Ocean Ecostructures**

**ScentXP**

 **Aigües de Barcelona**

 **COMPANYGAME**  
BUSINESS SIMULATORS

**ENGIOI**

 **nastibapp**

 **ONIRIA**  
THERAPEUTICS

 **suara**  
COOPERATIVA

 **aimsun.**

 **COOLING PHOTONICS**  
Join the Nano Revolution

 **FICOSA**

 **NAVOZYME™**

 **Opground**

 **timeisbrain**

 **bikeon**

 **CUATRECASAS**

**GENOMCORE®**

**ne-mi**

**UOBO®**

 **Webschool**

 **blindstairs**

**Damm**

 **magnetika**

 **NIMBLE**  
Diagnostics

**REVEAL**  
GENOMICS®

 **ZYMVOL**

# The 30 finalists of Catalonia Exponential Leaders 2024: well-established companies



**Aigües de Barcelona** applies the principles of the circular economy, advocating the regeneration of water with the aim of mitigating the hydric emergency in the region.



**Ficosa** seeks to make autonomous vehicles operate with greater energy efficiency and safety through the development of technologies such as AI and 5G.



**Aimsun Live** is a solution for the mobility sector based on real-time predictive traffic management with the use of AI.



**Genomecore** offers technological solutions for the massive analysis of genomic data based on privacy and secure data management in the biomedical field.



**CompanyGame** aims to automate the process of shaping courses, degrees and postgraduate studies using AI-based solutions.



**ScentXP by Puig** provides innovative solutions focused on the digitization of the olfactory experience in the perfume industry.



**Cuatrecasas** has adopted CELIA, a set of initiatives based on generative AI applicable to the legal field.



**Suara Cooperativa** develops and tests new technologies such as immersive applications to mitigate real problems and labor needs in social care and assistance.



**Damm** uses AI algorithms to personalize the customer experience as much as possible.



**Webschool** has developed the Bringapps platform, which integrates technologies such as AI and virtual reality to provide new educational services.



**Druids** presents its DRU-Gal technology for the production of steel wire, combining energy efficiency, digitization and process automation.

# The 30 finalists of Catalonia Exponential Leaders 2024: startups (I)



**Bike-On** can position cyclists in vehicles' GPS navigators and V2X platforms in real time to guarantee their safety on the road.



**Engidi** seeks to improve industrial occupational safety through electronic devices with integrated advanced technologies such as sensors and geolocation.



**Bit Intellitech** offers a new digitized agricultural productive management and improvement model by promoting sustainable practices through the quantification and remuneration of cuts in emissions.



**Magnetika** is working on the provision of an innovative alternative to electric vehicle charging with a new wireless technology suitable for all kinds of electric vehicles.



**BlindStairs** has created an equitable selection platform which, using AI, anonymizes professional profiles to eliminate any bias due to personal attributes so as to guarantee equal opportunities in the labor market.



**Nanobots Therapeutics** markets a pioneering platform in the health sector based on the provision of nanobots to enhance the accumulation of therapeutic drugs in target cells and facilitate the treatment of patients.



**Brickken**, through the Token Suite platform, offers a comprehensive solution for the tokenization of company assets by implementing blockchain technologies, AI and advanced data analysis.



**NasApp** tackles olfactory pollution by compiling citizens' perceptions and integrating them into a platform on which the data are managed in an automated manner using AI and machine learning.



**Cooling Photonics** has created a passive radiative cooling technology applicable to cooling panels to improve energy efficiency.

## The 30 finalists of Catalonia Exponential Leaders 2024: startups (II)



**Navozyme** offers pioneering deep tech solutions for the maritime sector to facilitate secure and real-time data exchanges, accelerate the digital transformation and contribute to the decarbonisation of the maritime industry.



**Nemi Mobility Solutions** provides technology to manage on-demand transport services efficiently and flexibly through route optimization and the digitization of the information flow.



**Nimble Diagnostics** is developing the first microwave-based medical device that provides continuous, non-invasive and non-ionizing monitoring for patients with implanted stents.



**Ocean Ecostructures** has developed a multi-technological solution that can offset the impact of port and offshore structures through the regeneration of marine biodiversity.



**Oniria Therapeutics** takes an innovative approach to the oncology market by combating the persistence of cancer with a drug that reprograms tumorous cells to a previous stage of malignancy and even induces their death.



**Opground** is an automated recruitment platform that optimizes the candidate selection process through the use of AI.



**Ouvo Plant Based** advocates a vegan alternative to eggs of animal origin by applying plant-based technologies and precision fermentation to make sustainable, ethical and healthy products.



**Reveal Genomics** uses pioneering techniques, sophisticated computer applications and machine learning to change the way in which biomarkers are used in the oncological field.



**timeisbrain**

**Time is Brain** has created **BraiN20**, a medical device that allows the real-time monitoring of brain activity to improve the diagnoses and prognoses of people suffering from acute strokes.



**Zymvol Biomodeling** has created a computational technology capable of discovering and designing enzymes in record time and in an affordable way.



Exponential Leaders in Catalonia, 2024

## 4. The 10 Catalonia Exponential Leaders 2024

# The 10 Catalonia Exponential Leaders 2024





## blindstairs

“Tech-driven equality for an inclusive future”

### Area of action:

Social innovation

### Technology:

 Artificial intelligence



[blindstairs.com](https://blindstairs.com)



#BlindStairs #Equality #Inclusion #Diversity

## Disruptive project

The platform proposed by BlindStairs operates as an “anonymous LinkedIn”. The innovation begins with its anonymization methodology boasting a system with specialized AI models to anonymize professional profiles, at a level which has proved unfeasible to automate and scale until now, eliminating any kind of bias due to gender, age or any other socio-demographic factor. These anonymized profiles constitute the basis for its professional network and allow it to compile a unique set of data in the world, with recruitment decisions based on anonymized data. This pioneering method removes any inherent biases in the data, permitting the development of UnbiasedAI, the world’s first completely bias-free AI, in order to address a problem which is already being legislated for, namely inherent biases in the current AI systems. Available in over six languages, it’s working alongside 60 companies to redefine the future of recruitment.

### Differentiating factors

- Application of **efficient and anonymized** selection without any bias of any kind to prioritize talent and not identity.
- Compilation of anonymized data to provide **bias-free AI**.
- A service which, by **guaranteeing equal opportunities**, ensures present-day and future compliance with the legislation in terms of equality and CSR.

### Future

Collaboration in the establishment of a labor market and recruitment system in which equal opportunities are key.

Eradication of any kind of bias in labor recruitment processes.

Provision of a fully bias-free AI application (IAaaS).

A desire to break down discrimination-related barriers and combat social inequalities and divides linked to the labor market.



“Imagining a new advocacy”

## Area of action:

Legal sector

## Technology:

 Artificial intelligence



[www.cuatrecasas.com](http://www.cuatrecasas.com)



#IAGen #LegalTech

## Disruptive project

CELIA (Cuatrecasas Experto Legal - IA) encompasses all the initiatives of Cuatrecasas in the field of generative artificial intelligence that the company has worked on since 2015. These have enabled the firm to improve the quality, efficiency and impact of its legal services. These include Harvey, a platform enabling lawyers to have a co-counsel to answer legal questions, generate texts, make comparisons and draw up legal strategies which already has 1,084 users and over 96,755 prompts, and Cuatrecasas ChatGPT, the firm's private chatbot to resolve non-legal issues and guarantee the confidentiality and privacy of the data included. Both solutions are operational and available on the Cuatrecasas internal portal.

## Differentiating factors

- It provides lawyers with a **high-quality** service based on excellence in order to improve the quality and efficiency of the legal services.
- It creates a **global ecosystem** of collaboration and legal knowledge that enables lawyers to share and generate collaborative legal strategies.
- It places emphasis on **ethics, security and responsibility** in the use of AI.
- For a number of years it has **driven an open innovation strategy** with initiatives such as *Cuatrecasas Acelera*, *Cuatrecasas Fast Track* and *Cuatrecasas Ventures*.

## Future

Cuatrecasas is aiming to lead the disruptive innovation in the legal sector by creating new products and services leveraged by generative artificial intelligence, in order to provide personalized solutions with greater added value for its customers while improving internal and sector efficiency.

CELIA also aspires to guide society towards safe, responsible and ethical use of artificial intelligence in law, addressing social challenges and collaborating in a global ecosystem of legal knowledge.

Fem avui l'**empresa** del demà






*“Revolutionizing energy transfer for a wireless world”*

## Areas of action:

Energy, chemistry and mobility resources

## Technologies:

-  Fuel cells
-  Internet of things (IoT)
-  Semiconductors and electronics



[magnetika.tech/ca](https://magnetika.tech/ca)






#Magnetikatech #Wireless #Energy

## Disruptive project

Magnetika offers a new wireless charging solution for electric vehicles such as electric bicycles, urban vehicles, mobile robots and drones. New wireless charging solutions are leading to changes in the market, providing a more efficient, convenient and sustainable alternative to conventional charging with a cable or by contact. This is driving the transition towards electric vehicles and opening up new business opportunities in areas such as charging infrastructures. Magnetika’s patent provides a solid foundation for the development and deployment of large-scale wireless charging systems with benefits in terms of energy and operating costs. The above will allow the company to position itself in the urban electric mobility and robotics market.

## Differentiating factors

-  Development and deployment of **wireless charging systems**.
-  Use of **magnetic resonance** for the charging of remote devices.
-  A more **efficient, sustainable and practical** charging system.

## Future

To position itself as a benchmark in the electric vehicle and mobile robot market in the charging infrastructure sector.

To encourage the sustainable transition towards electric vehicles and means of transport.

To create new business opportunities in the charging and sustainable urban mobility infrastructure market.



“Transforming Maritime, Ahead of Time”

## Areas of action:

Blue economy  
Maritime transport, port and logistics sector

## Technologies:

- Artificial intelligence
- Blockchain
- Blue economy



[www.navozyme.com](http://www.navozyme.com)



#BlueEconomy #MaritimeSolutions

## Disruptive project

Navozyme is leading the transformation of the maritime industry with disruptive solutions that use blockchain technology to introduce pioneering electronic certificates, thus ensuring data integrity and the real-time verification of documentation during port processes. Moreover, thanks to the use of artificial intelligence to analyze data in real time, Navozyme optimizes the arrival of ships in the port to reduce waiting times and minimize the carbon footprint. These innovations not only simplify processes, they also promote more efficient and sustainable port operations and redefine the future of the maritime industry.

## Differentiating factors

- 3,500 fewer hours of administrative work with little added value.
- Optimization of services to save up to 10,200 hours of waiting time.
- Savings totaling 2,300 kg of fuel and 6,200 kg of CO<sub>2</sub> emissions.

\* Expected profits per 1,000 ship calls.

## Future

Reduce the dwell time of ships in ports and the carbon footprint of maritime transport-related activity, contributing to decarbonisation through innovative technological solutions that promote circularity and increase the safety, productivity and reputation of the global maritime industry.

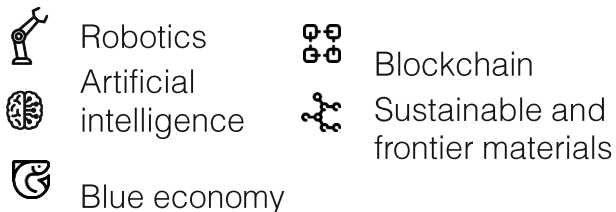


*"Empowering the ocean"*

## Areas of action:

Environmental impact technology  
Biodiversity regeneration

## Technologies:



[www.oceanecostructures.com](http://www.oceanecostructures.com)



#OceanEcostructures #Oceanovation

## Disruptive project

Ocean Ecostructures has developed a multi-technological solution that can offset the impact of port and offshore structures through the regeneration of marine biodiversity. This solution is based on the installation of biomimetic, multi-technological and digitally monitored microreefs (LBUs) using robotic and AI technology. Monitoring the LBUs makes it possible to verify the impact on biodiversity through the data that are collected, as well as a series of values such as CO2 capture, oxygen generation, biomass, pH, water turbidity, temperature, etc.

## Differentiating factors

- **Monitoring and reporting** of the LBU installations.
- **Comprehensive strategy** that combines accurate data, advanced analytics and intuitive mobile applications.
- **Transparent and efficient data management.**
- **Integration of three technologies.** Combination of pioneering digital, robotic and regeneration technology.

## Future

Disruptive technology not exclusively focused on the short-term restoration of marine environments, with a will and desire to create long-term resilient and sustainable marine ecosystems.

Ability to preserve marine ecosystems in the face of the current environmental challenges and promotion of the recovery of marine biodiversity in port and offshore structures.





*"Modulating new targets to overcome cancer persistence"*

## Area of action:

Health

## Technologies:

-  Emerging and precision therapies
-  Design of new drugs



[www.oniriatherapeutics.com](http://www.oniriatherapeutics.com)



#PrecisionOncology #Biotech




## Disruptive project

Approximately 90% of cancer-related deaths occur due to patient relapses or persistence and resistance to current treatments.

Oniria Therapeutics is taking an innovative approach to the oncology market with an oral drug called ONR-001 (currently at TRL 4/5). For the first time, this drug succeeds in over-activating TET2, a tumor suppressor and an essential dynamic factor that modulates numerous aspects of the tumorous cell related to cancer persistence. ONR-001 can increase the enzymatic activity of TET2 from the physiological to the pharmacological level, causing the tumorous cells to enter cell cycle arrest and then die.

During pre-clinical trials ONR-001 has demonstrated high efficacy in treating melanoma, colorectal tumors and acute myeloid leukemia, with excellent tolerability.

## Differentiating factors

-  **Low level of toxicity and broad applicability** to various types of tumors, capable of filling a gap in the current treatments.
-  **Innovative approach to the oncology market**, especially for **solid tumors**, for which traditional demethylating agents cannot be used due to their high levels of toxicity.
-  **The first in its category**, given that no one has ever been able to directly over-activate a tumor suppressor before.

## Future

Transform cancer treatment, designed for aggressive tumors that don't respond to standard therapies.

Provide significant benefits in cost savings by preventing the need for hospitalization or a professional health intervention during the administration.

Ensure that patients receive therapeutic interventions suited to their molecular profile for personalized care.



# UOBO®

“There aren't any eggs”

## Area of action:

Food

## Technology:

 Foodtech



[uobo.es/ca](http://uobo.es/ca)



#Biotech #PlantBasedFood  
#FoodInnovation



## Disruptive project

Uobo is an alternative to eggs of animal origin that integrates plant-based ingredients into its production process and precision fermentation to guarantee high-quality and sustainable products.

In recent years there has been an exponential increase in the range of alternatives to animal products in almost all areas. However, there is a poor supply of vegan eggs in the current market.

Uobo is currently marketing its first product: a 100% plant-based liquid egg mixture. This product has the same versatility as traditional eggs and allows the preparation of all kinds of dishes without having to resort to the use of animals. The proprietary formula is highly scalable and work is underway to patent it in the future.

## Differentiating factors

- Use of technologies to ensure **innovative and high-quality products**.
- Commitment to **sustainability** and the **ethical production** of food products.
- Product **versatility**.
- Highly scalable **proprietary formula**, allowing its rapid and effective expansion in the market.

## Future

Provide sustainable and ethical alternatives to products of animal origin.

Address the environmental crisis caused by the production of food of animal origin.

Promote a healthier and more compassionate lifestyle.



# ScentXP

*"The easiest path towards the perfect olfactory experience"*

## Areas of action:

Cross-cutting  
Olfactory  
technology

## Technologies:

-  Artificial intelligence
-  Sustainable solutions



[scentxp.com/ca](https://scentxp.com/ca)



#SmellingUnlimited

#OlfactiveExperience #ScentXperience



## Disruptive project

With the technologies developed by ScentXp the intention is to reinvent the olfactory industry, starting with perfumery and cosmetics.

ScentXp is seeking to meet the need to digitize the olfactory experience to address the challenges facing the market and transform the value chain in the industry by gearing it towards digitization, sustainability and the visualization and graphical representation of smells, making it more democratic, transparent and accessible.

This project will generate a positive impact on trade and the entire value chain, ranging from perfumers to consumers.

## Differentiating factors

-  Internal talent established in Catalonia.
-  Expertise in user experience.
-  Open innovation.
-  Development of a new disruptive business model.
-  Promotion of the olfactory experience and creation of a visual language for scents.
-  Use of olfactory technologies in the field of medical research.

## Future

Development of an ecosystem with cutting-edge olfactory technologies to improve the olfactory experience in the digital and physical fields. It will also provide customers with more information, discoveries and tips and minimize inefficiencies in production.

Creation of a reference international community within the sector.

Fem avui l'empresa del demà






“People can change the world”

## Area of action:

Social services and personal care

## Technologies:

-  Robotics
-  Artificial intelligence
-  Internet of things (IoT)
-  DLT/Blockchain
-  Immersive Reality, AR/VR



[www.suara.coop](http://www.suara.coop)



#Peoplewhodecide #Curesforpeople #Innovation  
#SocialResponsibility #peopleTechCare









## Disruptive project

Suara Cooperativa's Social Digital Lab is the first living lab accredited by ENOLL in the social field focused on research, development and the testing of new technologies to provide solutions for real problems and needs related to social care and assistance.

The Social Digital Lab implements new services to improve the well-being and mental and physical health of people using immersive and virtual reality. The new services materialize through collaboration and the alliance between three agents: the social axis, with the Social Digital Lab, the technological axis, with Broomx, and the scientific axis, with the Terrassa Health Consortium.

The strategy is developed under the criteria of accessibility and affordability in terms of the digital divide through usability and scalability; in other words, they must be tools capable of being economically democratized.

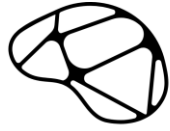
## Differentiating factors

-  Open Innovation approach.
-  Strategic alliances and Quadruple Helix Methodology to involve all the players and co-create solutions.
-  Living Lab model with real and safe spaces for experimentation.
-  Facilitating leadership and approach geared towards results and transparency. Multi-disciplinary promotional team.
-  Resilience and ability to adapt to changing natural environments.
-  Immersive and virtual technologies.
-  Data collection, research and scientific testing.

## Future

- Become the radar for need and reality connectors.
- The therapeutic revolution of the 21st century.
- New business model for scientifically-tested wellness services for people.
- Generate alliances to allow the exploration of new technologies.
- Convert the living lab into a reference for the social sector.
- Add more value to the social impact it generates.

Fem avui l'empresa del demà



## timeisbrain

“We have created *BraiN20®*, the stroke ECG”

### Area of action:

Health

### Technologies:

- Digital health
- Internet of things (IoT)
- Artificial intelligence



[www.tibtimeisbrain.com](http://www.tibtimeisbrain.com)



#Healthcare #Neurosciences  
#Strokeismypriority



## Disruptive project

Every hour that goes by until the patient receives treatment means 20% less likelihood of recovery after a stroke. At the moment there are no technologies to allow rapid and accurate decision-making from the onset of the symptoms and throughout the acute stroke care process, leading to delays that result in the loss of millions of neurons.

*Time Is Brain* has developed *BraiN20®*, a medical plug and play device that monitors the brain's viability in real time from the onset of the symptoms until after endovascular thrombectomy (EVT) treatment. It consists of a portable device (in tablet format) with a single-use sensor associated with software that includes two proprietary algorithms.

## Differentiating factors

- Five Catalan hospitals are currently using *BraiN20®* in the field of clinical research studies (TRL 7).
- Improved triage of patients and early detection of complications.
- Use of disruptive technologies that can address a critical problem in the rapid decision-making during a stroke.
- BraiN20®* will lead to a significant increase in terms of quality-adjusted life years (QALYs) in Catalonia.

## Future

- Improve the management of the diagnosis and prognosis of the acute stroke.
- Provide individualized care for the person suffering from an acute stroke.
- Allow equitable access to the endovascular thrombectomy (EVT).
- Reduce mortality and morbidity.
- Increase the quality of life of people who suffer a stroke.

Exponential Leaders in Catalonia, 2024

## 5. Global trends

The combination of economic crises and global instability beset by the pandemic, geopolitical crises, supply chain disruptions, inflation, a lack of resources, blockades, rising fuel prices and the confirmation of climate change are characterizing recent years. These issues will have profound implications for industry and they look set to continue in the future.

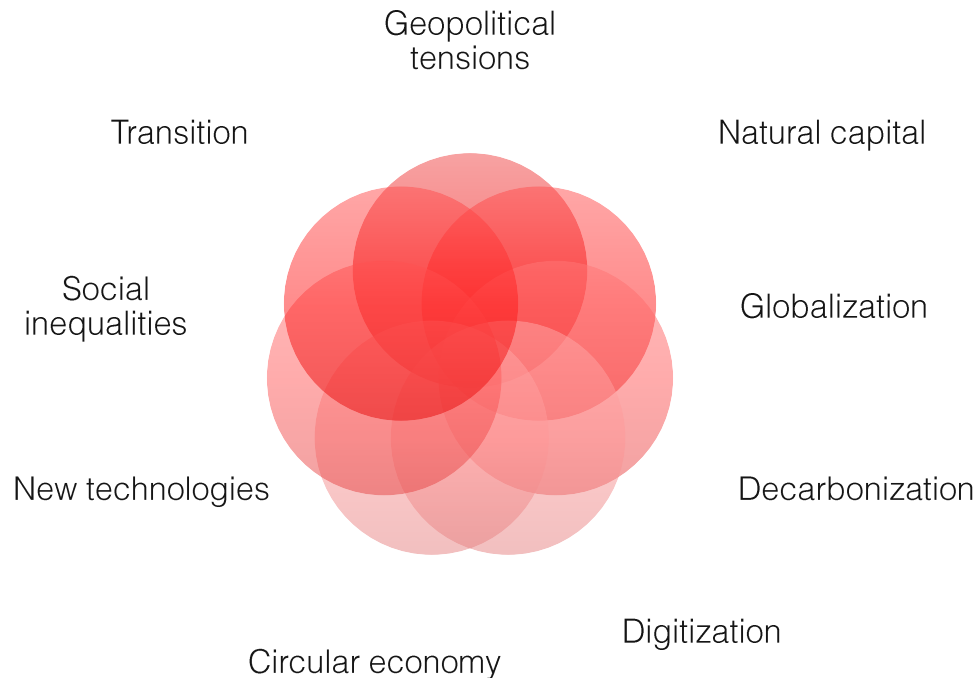
Despite this daunting reality, 2024 may prove to be an excellent time to explore new technological solutions to help businesses overcome the challenges they're facing.



**RIS3** (*research innovation strategies for smart specialization*) are integrated agendas for the territorial economic transformation. The aim is for innovation and knowledge to become drivers to move towards a greener, digital, resilient and fair socio-economic model.

## RIS3CAT 2030 shared agendas

- A sustainable, fair, equitable and healthy food system
- An emission-neutral energy and resource system that's environmentally friendly
- A sustainable mobility and logistics system
- A universal, sustainable and resilient social and healthcare system
- A reflexive, anticipatory, inclusive and responsive education and knowledge generation system
- A sustainable and competitive industrial system
- A cultural system integrating people, territory and history



# Relationship between the Catalan Exponential Leaders and the RIS3CAT areas

● A sustainable, fair, equitable and healthy food system

**UOBO**



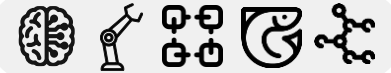
● A sustainable and competitive industrial system

**CUATRECASAS**



● An emission-neutral energy and resource system that's environmentally friendly

**Ocean Ecostructures**



● A universal, sustainable and resilient social and healthcare system

**ONIRIA**  
THERAPEUTICS



**blindstairs**



**magnetika**



**timeisbrain**



● Sustainable mobility and logistics system

**ScentXP**



**NAVOZYME™**





# Selection of ACCIÓ technological trends in 2024



*Artificial intelligence*

Accelerating the transformation in all areas



*Cybersecurity*

Digital trust



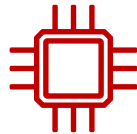
*Quantum*

The future is getting closer



*Industry 4.0*

Disruptive change in the way we produce



*Chips and semiconductors*

The key to digitalization



*Personalized medicine*

Challenging clinical practice



*Decarbonization*

Towards climate neutrality



*Hydrogen*

From the Big Bang to the future



*Blue economy*

The new challenges



*Water technologies*

Preservation of an essential resource

## Artificial intelligence

- Generative AI
- Creative AI
- AI-based decision-making
- AI-based biometrics and facial recognition
- Ethical and responsible AI
- Adaptive AI to improve the consumer experience



- Ensuring data privacy and security
- More granular attacks
- *Zero trust*
- *Cybersecurity mesh*
- *Cloud-based cyber security*
- Ethical hacking

## Cybersecurity

## Quantum

- Hybrid systems
- Acceleration of quantum applications
- Quantum sensors
- New qubits
- Cryptography and cyber security
- Quantum chip
- Quantum AI
- Frontier materials

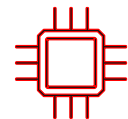


- Advanced production techniques
- Robotics
- IdC
- AI
- Nanotechnology
- Cognitive technologies
- PDP digital integration of real-time information (physical-to-digital-to-physical)
- Data analytics
- Product and service customization and adaptability

## Industry 4.0

## Chips and semiconductors

- New transistor designs
- Improved lithography processes
- Advanced packaging and finishing
- Layered architectures
- Improved efficiency
- Disruption in materials
- Photonic chip
- Quantum chip
- Open architectures
- Re-imagining electronics and computing



## Personalized medicine

- Accurate diagnoses
- Early detection of diseases
- Personalized clinical practice
- Maximization of safety and effectiveness
- Omic technologies, AI and big data
- Genomic sequencing
- Molecular biology



- Carbon footprint and carbon taxes
- Hybridization of renewable energy facilities with hydrogen production, bio-refineries, etc.
- Replacement of raw materials of fossil origin
- CO<sub>2</sub> capture and reuse technologies

## Decarbonization

## Hydrogen

- Fuel cells
- Advanced electrolysis technologies such as solid state electrolyzers and exchange membranes
- Hydrogen carriers
- Biohydrogen
- Development of distribution infrastructures



- Aquaculture
- Ensuring biodiversity and marine ecosystems
- Tourism and sports
- Renewable marine energies
- Blue bio-economy
- America's Cup legacy

## Blue economy

## Water technologies

- Sustainable water management systems
- Technologies for the recovery of aquifers
- Desalination plants
- AI, big data and sensors for water management
- Smart irrigation systems
- Waste water treatment technologies



Exponential Leaders in Catalonia, 2024

# Catalonia Exponential Leaders Companies 2021 - 2024

# Catalonia Exponential Leaders 2021-2024

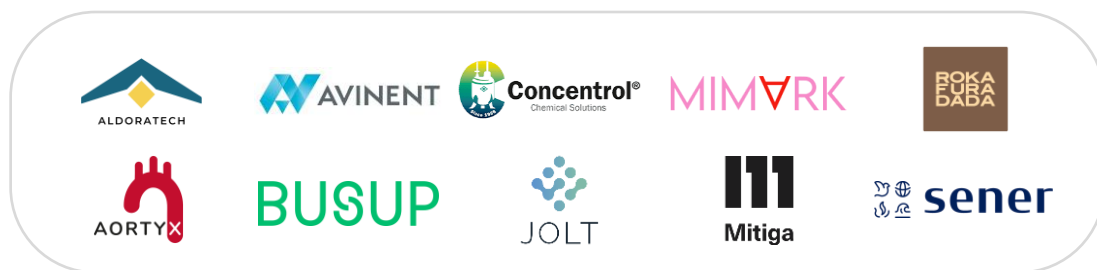
2021



2022



2023



2024



# Thank you!

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[catalonia.com](http://catalonia.com)



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**Més informació sobre el sector, notícies i oportunitats:**

<https://www.accio.gencat.cat/ca/serveis/banc-coneixement/cercador/BancConeixement/eic-exponential-leaders-catalunya-2023>

